FINDING OF NO SIGNIFICANT IMPACT
MAINTENANCE DREDGING
SAN JUAN HARBOR MAINTENANCE DREDGING
SAN JUAN, PUERTO RICO

I have reviewed the Environmental Assessment (EA) of the proposed action. Based on information analyzed in the EA, reflecting pertinent information obtained from other agencies and special interest groups having jurisdiction by law and/or special expertise, I conclude that the proposed action will have no significant impact on the quality of the human environment. Reasons for this conclusion are, in summary:

1. There will be no adverse impacts to endangered or threatened species based on coordination with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service.

2. In coordination with the State Historic Preservation Officer, it was determined there would be no impacts on sites of cultural or historical significance.

3. State water quality standards will be met.

4. The proposed project has been determined to be consistent with Puerto Rico's Coastal Zone Management Program.

5. Measures to eliminate, reduce, or avoid potential impacts to fish and wildlife resources will be implemented during project construction.

6. Benefits to the public will be maintenance of the navigation channel and continued local and regional economic stimulus.

7. Prior to work initiation, the EPA will have concurred with the Corps' determination that all dredged material is suitable for disposal at the ODMDS.

In consideration of the information summarized, I find that the proposed action will not significantly affect the human environment and does not require an Environmental Impact Statement.

MAR

Date

TERRENCE C. SALT
Colonel, Corps of Engineers
Commanding

Lang/CESAJ-PD-ES KH
Kurzbach/CESAJ-PD-ES
Smith/CESAJ-PD-E 3/4
Davis/CESAJ-PD-A
Salem/CESAJ-PD
Burns/CESAJ-DX
Maguire/CESAJ-DD
Salt/CESAJ-DE

DP Bonner

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

FINDING OF NO SIGNIFICANT IMPACT
MAINTENANCE DREDGING
SAN JUAN HARBOR MAINTENANCE DREDGING
SAN JUAN, PUERTO RICO

I have reviewed the Environmental Assessment (EA) of the proposed action. Based on information analyzed in the EA, reflecting pertinent information obtained from other agencies and special interest groups having jurisdiction by law and/or special expertise, I conclude that the proposed action will have no significant impact on the quality of the human environment. Reasons for this conclusion are, in summary:

1. There will be no adverse impacts to endangered or threatened species based on coordination with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service.

2. In coordination with the State Historic Preservation Officer, it was determined there would be no impacts on sites of cultural or historical significance.

3. State water quality standards will be met.

4. The proposed project has been determined to be consistent with Puerto Rico's Coastal Zone Management Program.

5. Measures to eliminate, reduce, or avoid potential impacts to fish and wildlife resources will be implemented during project construction.

6. Benefits to the public will be maintenance of the navigation channel and continued local and regional economic stimulus.

7. Prior to work initiation, the EPA will have concurred with the Corps' determination that all dredged material is suitable for disposal at the ODMDS.

In consideration of the information summarized, I find that the proposed action will not significantly affect the human environment and does not require an Environmental Impact Statement.

16 March 1994
Date

TERRENCE C. SALT
Colonel, Corps of Engineers
Commanding

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

AND ENVIRONMENTAL ASSESSMENT

SAN JUAN HARBOR MAINTENANCE DREDGING

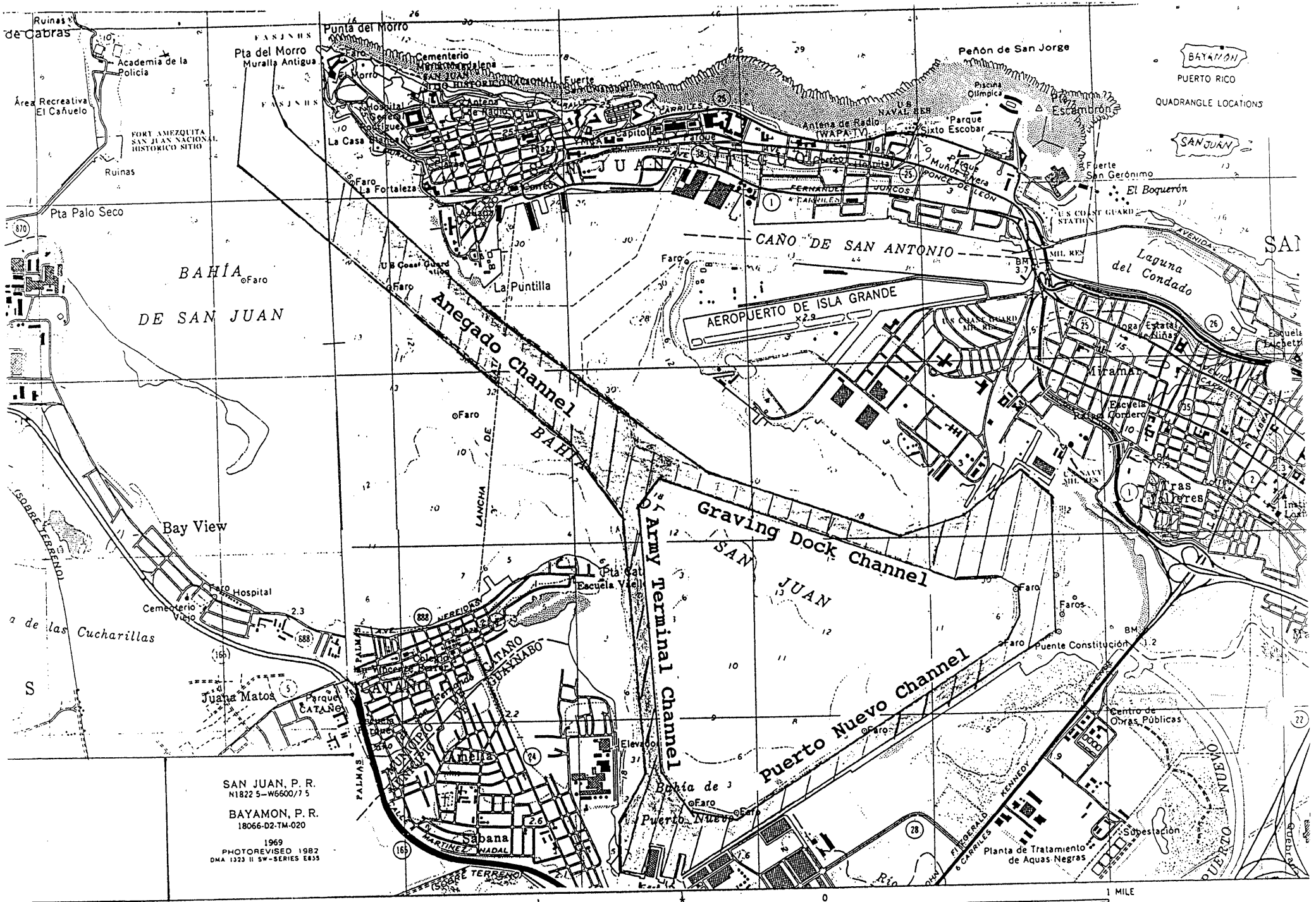
SAN JUAN, PUERTO RICO

U.S. Army Corps of Engineers
Jacksonville District
Planning Division

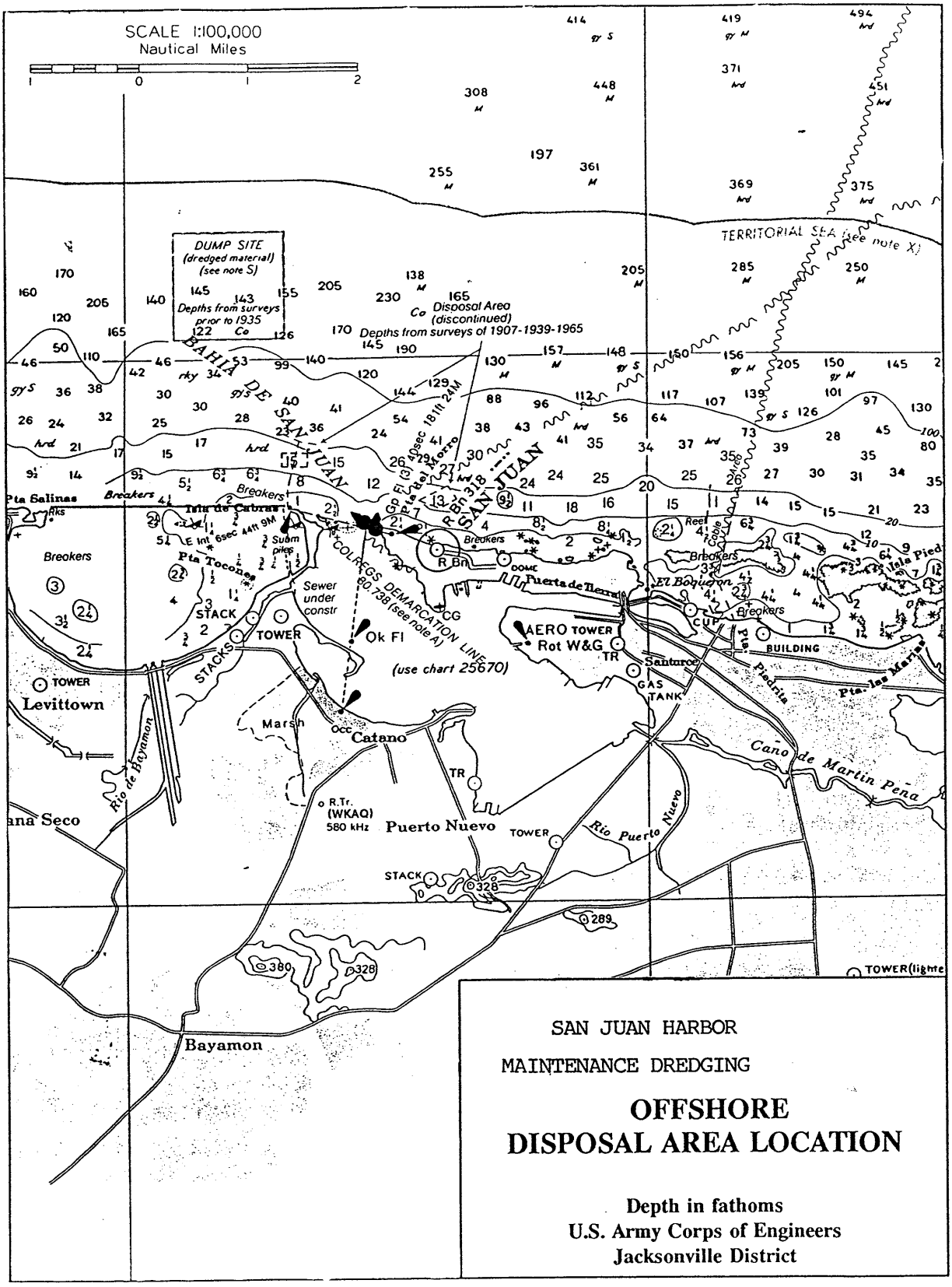
TABLE OF CONTENTS

TABLE OF CONTENTS

SUBJECT — PAGE NO.



SAN JUAN HARBOR MAINTENANCE
DREDGE AREA 1994
(cross-hatched)



SAN JUAN HARBOR

MAINTENANCE DREDGING

OFFSHORE DISPOSAL AREA LOCATION

Depth in fathoms

U.S. Army Corps of Engineers

Jacksonville District

ENVIRONMENTAL ASSESSMENT

1.00 PURPOSE OF AND NEED FOR ACTION.

1.01 Project Location. San Juan Harbor is located on the eastern third of Puerto Rico's north coast and is the only natural harbor on this coast offering all-weather shipping protection.

1.02 Project History. San Juan Bay began to develop as a commercial port with the first European colonization of Puerto Rico in the early 1500's. Today, Puerto Rico is highly industrialized and must import almost all bulky or weighty items by sea. San Juan Harbor is not only the most important port in Puerto Rico; it is the predominant commercial port in the northeastern Caribbean. It serves as a major stopover point for Caribbean and intercontinental shipping, is one of the largest containerized cargo ports in the world and is a port of call for U.S. and allied naval vessels. It also has a large drydock and ship repair facility, a major cruise ship origination point and a deep sea sportfishing homeport. It has been a Federal Navigation project since 1917. To maintain harbor navigability and existing authorized project depths the harbor's channels and basins need to be maintenance dredged regularly. Without regular maintenance dredging deeper draft vessels must carry light loads to navigate safely in San Juan Harbor.

1.03 Authority. The project is authorized by the Rivers and Harbors Act of 3 July 1958, House Document 38, 85th Congress, 1st Session.

2.00 ALTERNATIVES.

2.01 No-action. This alternative would result in the gradual loss of adequate depth in San Juan Harbor. Consequently, vessels would have to be loaded light in order to navigate safely. Such transport inefficiencies would result in lost revenues and price increases for consumer goods in Puerto Rico and other Caribbean ports which rely on goods shipped through San Juan. Prolonged no-action will require that ships be light-loaded to permit the continued safe use of shoaled channels. This would result in a downscaling of commercial shipping in San Juan Harbor. Therefore, this alternative is not considered viable.

2.02 Maintenance Dredging. The most recent maintenance dredging of San Juan Harbor occurred in 1989; however, portions of the main shipping channels are again shoaled and will need to be dredged this fiscal year. In order to maintain safe and cost effective navigation within San Juan Harbor for commercial shipping, approximately 435,880 cubic yards of shoal material must be maintenance dredged from the channels and basins of San Juan Harbor. This maintenance dredging will provide project depths of:

Project Feature	Required Depth in Feet at MLW
Anegado Channel	42, 39, 36 ft.
Army Terminal Channel	36
Puerto Nuevo Channel	32
Puerto Nuevo Basin	32
Graving Dock Channel	30
Graving Dock Basin	30

The material to be dredged is predominantly silty clay. The dredging method has not yet been determined, however the most cost-effective method will likely be dredging with a barge mounted clamshell or dragline.

2.03 Dredged Material Disposal Alternatives. Creation of disposal islands in the harbor would not be operationally efficient or cost effective due to the large amount of dredged material to be disposed of, and the unavailability of suitable sites within the harbor to accommodate it. Disposal in local wetlands would significantly reduce this already scarce resource in the San Juan area. Upland disposal is untenable due to dense urbanization in San Juan and the amount of acreage required on which to place such a large volume of material.

2.04 Offshore Disposal of Dredged Material. This alternative is operationally efficient and the most cost effective way to dispose of dredged material due to the presence of a nearby EPA-approved Ocean Dredged Material Disposal Site (ODMDS). Furthermore, biological and chemical tests of the material to be dredged revealed, that disposal of the material at this site will result in only minimal and temporary impacts to aquatic resources at the ODMDS. Therefore, all maintenance dredged material is scheduled for disposal at the ODMDS. The San Juan ODMDS is marked on NOAA navigation charts. It is located about 2 nautical miles north of Isla de Cabras in water depths that range from 800 to 1,200 feet at the following coordinates: 18°30'10"N, 66°09'31"W; 18°30'10"N, 66°08'29"W; 18°31'10"N, 66° 08'29"W; 18°21'10"N, 66°09'31"W. Biological and chemical test results are discussed in Appendix I - MPRSA Analysis, and under Water Quality in the Affected Environment and Environmental Consequences Sections.

3.00 AFFECTED ENVIRONMENT

3.01 San Juan Harbor. Historically, the harbor likely supported vigorous floral and associated fish and wildlife resources. As land use adjacent to San Juan Harbor through the centuries became increasingly residential, commercial and industrial, this estuary's natural resource values were proportionately diminished. Nevertheless, San Juan Bay became a part of the National Estuary Program (NEP) in 1993. NEP sites are estuaries of unusual value, or represent a particular geographic or ecologic region,

where environmental problems may best be resolved through interdisciplinary management. The United States Environmental Protection Agency (EPA) sponsors NEP sites, providing start-up planning funds for an initial period of five years. Selection of San Juan Harbor as a NEP site recognizes that it has some serious environmental problems, but that it potentially can recover some of its former natural resource values.

3.02 Mangrove stands. Remnant mangrove stands at the mouth of Rio Puerto Nuevo and recent mitigation plantings at the mouth of Martín Peña Channel occur near portions of channels and basins to be maintenance dredged.

3.03 Benthic Flora and Fauna. As light cannot penetrate the turbid waters of those areas of San Juan Harbor to be dredged, sessile floral communities cannot survive on the bottom. Resident sessile faunal communities may exist on the bottom but are probably sparse due to the high sedimentation rate within the proposed dredging area. Mobile fauna may reside in, seasonally occur or migrate through the project area.

3.04 Historic, Cultural, and Archeological Resources. An archival search and literature review, including the current National Register of Historic Places listing, have been conducted. Cultural resources field investigations have been conducted for the proposed deepening and widening of San Juan Harbor. These studies were conducted in the area of the proposed maintenance project area. Both the San Juan National Historic Site and Old San Juan are significant cultural resources which are located in the vicinity of this project and potentially significant underwater resources may be located in the Bay of San Juan. Because this project involves maintenance of the San Juan Harbor Channel which has been previously dredged, it is unlikely that potentially significant cultural resources are located in the existing harbor channel. The proposed disposal area for this project is a previously used offshore disposal area which is approximately two nautical miles from San Juan Harbor. It is not likely that significant cultural resources are located there.

4.00 ENVIRONMENTAL CONSEQUENCES

4.01 San Juan Harbor. The social infrastructure may be temporarily disrupted during maintenance dredging of the harbor but this will not result in any permanent negative effects. Improved harbor navigability will improve shipping efficiencies.

4.02 Mangrove stands. The scheduled maintenance dredging of the harbor will not affect this resource as the mangroves are located a sufficient distance from the dredging area.

4.03 Benthic Flora and Fauna. Dredging will result in the loss of benthic organisms in the designated maintenance areas. These communities will reestablish upon work

completion. Temporary disruption of normal marine life activity is likely at both the dredging and disposal areas; however, the effects are not expected to be of extended duration. No fish nursery or productive fishing area is known to be associated with the proposed disposal area. Also, the prevailing currents at the disposal area move in a westerly direction and will carry dissolved and suspended materials away from the shore and reef sites.

4.04 Water Quality. Dredging operations will result in some temporary changes in water quality. Elevated turbidity levels will be evident during operations at the dredging and disposal sites. Locally depressed photosynthetic rates could occur as a result of diminished light penetration at both sites. The elevated turbidity levels are not expected to result in any long term adverse impacts to resident biotic communities at the dredging or disposal sites. No significant long term effects on any water quality parameters are expected. The work will have to be accomplished within the terms and conditions of the Water Quality Certificate, which should ensure that water quality parameters are not exceeded.

4.05 Historic, Cultural, and Archeological Resources. As stated above, there are no known cultural resources, included in or eligible for inclusion in the National Register of Historic Places, that will be affected by the proposed maintenance dredging of San Juan Harbor with disposal of dredged material in a previously used offshore disposal area. The proposed deepening and widening of San Juan Harbor has been coordinated with the Puerto Rico State Historic Preservation Officer (SHPO). In letters dated September 20, 1993 and November 1, 1993, the SHPO concurred with the District's determination that additional archival research and fieldwork should be conducted for potentially significant cultural resources located in an area of proposed channel widening. These resources are not located in an area that will be dredged for this maintenance dredging project.

4.06 Relationship Between Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity. The human environment is under long-term use and is being protected for long-term use. There would be a loss of short-term productivity of natural resources resulting from dredging but the long-term use of the harbor will not be altered significantly.

4.07 Irreversible or Irretrievable Commitments of Resources. Except for the use of fossil fuel to dredge, resources will not be so committed.

4.08 Possible Conflicts Between the Proposed Action and the Objectives of Federal, regional, State and Local (including Indian tribes) Land Use Plans, Policies and Controls for the Study Area. The proposed project would protect the present commercial and industrial uses designated by the Commonwealth of Puerto Rico for the study area.

4.09 Community Growth, Cohesion, and Displacement of People and Businesses. Maintenance dredging of San Juan Harbor will not adversely affect these factors, but should serve to at least maintain current conditions.

4.10 Threatened and Endangered Species. Informal Endangered Species Act consultation on harbor maintenance dredging was done based on the Biological Assessment prepared for, and coordinated with, the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) for San Juan Harbor's proposed widening and deepening. In 8 November 1993 telephone conversations with the FWS and NMFS, agency representatives concurred that San Juan Harbor Maintenance dredging would not result in effects on Endangered and Threatened Species under their respective jurisdiction provided all precautions developed during consultation are also applied to maintenance dredging operations. This correspondence is in Appendix II - Endangered Species Act Consultation.

NOTE: The San Juan Harbor Widening and Deepening - Section 7 Consultation was conducted with the understanding that Hopper Dredges would not be used for that project. However, if hopper dredges are used for maintenance dredging, the NMFS representative requested that a contract provision be included to require a "qualified observer" be posted on the dredge to confirm the anticipated absence of turtles in the harbor during at least a portion of initial dredging runs.

An Environmental Assessment of probable effects on the human and natural environment has led to the conclusion that neither the changes herein proposed nor their effects are significantly adverse to the natural or human environment. Therefore, a Finding of No Significant Impact (FONSI) accompanies this Environmental Assessment (EA).

5.0. LIST OF PREPARERS

NAME	DISCIPLINE	EXPERIENCE	ROLE IN PREPARING EA
William J. Lang	Biologist	16 years environmental impacts assessment	Environmental Impact Assessment, Endangered Species Coordination
Janice E. Adams	Archeologist	8 years experience NEPA documentation,	Cultural Resources Analysis
Glenn Schuster	Environmental Engineer	15 years professional engineer	Water Quality Impacts

6.00 SUMMARY OF COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REQUIREMENTS.

6.01 Clean Air Act, as amended. 42 U.S.C. 7401 et seq. Any official of a Federal agency having jurisdiction over any property or facility constituting an emissions source shall be subject to and comply with Federal, state, interstate or local requirements respecting control and abatement of pollution. All Federal projects, licenses, permits, financial assistance and other activities must conform to EPA approved or promulgated state implementation plans. The assurance of such conformity is an affirmative responsibility of the head of the Federal agency involved. Sections 118, 176(c), and 309, 42 U.S.C. Executive Order 12088, Federal Compliance with Pollution Control Standards, 13 October 1978.

The only project-related sources of such emissions would be the motorized construction equipment. All vehicles, generators, pumps and construction-related engines will conform to Puerto Rican emissions standards.

6.02. Clean Water Act (Federal Water Pollution Control Act), as amended. 33 U.S.C. 1251 et seq. (PL 92-500). Any official of a Federal agency having jurisdiction over any property or facility or engaged in any activity that may result in the discharge or runoff of pollutants shall be subject to, and shall comply with federal, state, interstate and local requirements, both substantive and procedural, respecting control and abatement of pollution. Federal agencies are not exempt from the requirement to obtain certification from the state or interstate agency for any discharge into navigable waters (except as provided in Section 404(r)). Executive Order 12088, 13 October 1978. EPA guidelines, 33 U.S.C. 1344b. CEQ Memorandum 17 Nov 80, guidance to apply Sec. 404(r) to a Federal project.

The Environmental Quality Board of Puerto Rico issued a water quality certification for maintenance dredging in San Juan Harbor on 3 August 1979. There is no expiration date for this certification. This project therefore complies with this section.

6.03 Coastal Zone Management Act of 1972, as amended. 16 U.S.C. 1451 et seq. Any activity that a Federal agency conducts or supports that directly affects the coastal zone, and any development project in the coastal zone, shall be, to the maximum extent practicable, consistent with approved state management programs. NOAA Regulations, 15 CFR Part 930 revised 15 June 1979, 44 F.R. 37142.

Consistency with the Puerto Rico Coastal Management Program is being sought. An Application for Certification (attached) is being reviewed by the Puerto Rico Planning Board. Concurrence with the Corps' Finding of Consistency is expected prior to project initiation.

6.04 Endangered Species Act (ESA)of 1973, as amended. 16 U.S.C. 1531 et seq. This project is considered fully coordinated under the ESA with receipt of written concurrence of the No Effect Determination from the USFWS and NMFS and verbal verification that their written concurrence also pertains to maintenance dredging.

6.05 Fish and Wildlife Coordination Act, as amended. 16 U.S.C. 661 et seq. The proposal was coordinated with the USFWS under a previously published public notice.

6.06 Marine Protection, Research, and Sanctuaries Act of 1972, as amended. 33 U.S.C. 1401 et seq. In connection with Federal projects involving dredged material, the Secretary of the Army may issue permits for the ocean discharge of dredged material, applying the same criteria which apply to Environmental Protection Agency (EPA) issuance of permits for ocean dumping of other material. Executive Order 12088, Federal Compliance with Pollution Control Standards, 13 Oct 78.

Testing of dredged material proposed for ocean disposal revealed that in general, the material is clean and suitable for ocean disposal. No individual chemical tested was identified at a level that would exclude this material from ocean disposal. Based on this evaluation, the Jacksonville District proposed that project area sediments are suitable for ocean disposal and requested the EPA's concurrence for ocean disposal of dredged material for a period of three years for both port expansion and maintenance dredging. However, one-third of the bioassay test results exhibited mortalities exceeding reference data. Although the Jacksonville District interpreted these results as a procedural anomaly, the EPA required bioassay retesting at sampling stations where sediments failed the original analysis. As the sites to be resampled were originally tested and found acceptable during the Puerto Nuevo Study, the Corps expects this retest to result in an EPA concurrence with the Corps' original determination. Upon successful retesting the Corps expects final EPA concurrence by 1 May 1994. The EPA did concur with ocean disposal of material which passed the bioassay analysis. Until EPA concurs that all dredged material is suitable for disposal at the ODMDS, the project is in partial compliance with the Section 103 of the MPRSA.

6.07 National Environmental Policy Act of 1969, as amended. Environmental information on the project has been compiled and the Environmental Assessment is available for public review in compliance with 33 CFR Parts 335-338. These regulations govern the Operations and Maintenance of US Army Corps of Engineers Civil Works Projects involving the Discharge of Dredged or Fill Material into Waters of the US or Ocean Waters. This public coordination and environmental assessment complies with the intent of NEPA. The process will fully comply with the Act once the Finding of No Significant Impact has been signed by the District Commander.

6.08 National Historic Preservation Act of 1966, as amended. Consideration of effects on historic resources are addressed in the body of this NEPA document and comments have been received from the State Historic Preservation Officer (SHPO).

The SHPO concurred with our determination that additional archival research and fieldwork should be conducted for potentially significant cultural resources located in an area of proposed channel widening. These resources are not located in an area that will be dredged for this maintenance dredging project. Cultural resources included in or eligible for inclusion in the National Register of Historic Places will not be affected by the proposed maintenance dredging, therefore this project is in compliance with the National Historic Preservation Act and the Archeological and Historic Preservation Act.

7.00 REFERENCES

U.S. Army Corps of Engineers. 1982. San Juan Harbor, Puerto Rico, General Design Memorandum Phase I Reevaluation Report and Supplemental Environmental Impact Statement, Jacksonville District, Florida. Rev Mar '82. 78 p., plates, appendices.

U.S. Army Corps of Engineers. 1985. Finding of No Significant Impact and Environmental Assessment, Periodic Maintenance Dredging Operations at San Juan Harbor. Jacksonville District, Jacksonville Florida.

U.S. Army Corps of Engineers. 1993. San Juan Harbor, Section 103 Ocean Disposal Evaluation Report. Jacksonville District, Jacksonville, Florida.

U.S. Army Corps of Engineers. 1993. U.S. Endangered Species Act Biological Assessment, San Juan Harbor Navigation Study, San Juan, Puerto Rico. Jacksonville District, Florida.

APPENDIX - I

Marine Protection, Research, and Sanctuaries Act
Analysis and Section 103 Evaluation Report

October 14, 1993

Planning Division
Environmental Branch

Mr. Mario Del Vicario
Chief, Marine and Wetlands Protection Branch
United States Environmental Protection Agency
Region II
26 Federal Plaza
New York, New York 10278

Dear Mr. Del Vicario:

Enclosed is the Section 103 Evaluation, and the Final Consolidated Report For Obtaining and Analyzing Sediment Samples, Water Samples and Bioassay Samples from San Juan Harbor, Puerto Rico, dated October 1, 1993. This report is submitted in accordance with Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (MPRSA) and the criteria published in 40 CFR Parts 220-228.

We have completed an evaluation of sediments from San Juan Harbor, San Juan, Puerto Rico. The Sampling Plan and Protocol for this evaluation were developed in cooperation with your staff and coordinated with them prior to being implemented. The evaluation involved:

a. Physical analysis of sediments for selected parameters.

b. Chemical analysis of elutriates and sediments for selected metals and organic compounds.

c. Bioassays of elutriates of sediments.

d. Bioassays of sediments.

e. Tissue analysis to determine bioaccumulation in two species, was not performed by agreement with your staff.

Based on the analysis of this evaluation of the dredged material from the defined project area, we have determined that the material proposed for ocean disposal from the San Juan Harbor is suitable for ocean disposal in accordance with the MPRSA in the San Juan Ocean Dredged Material Disposal Site (ODMDS).

We request that you complete your review of the evaluation results and provide a letter of concurrence for ocean disposal of the material specified in the enclosed 103 evaluation within 15 days of your receipt of this letter.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosures

SAN JUAN HARBOR
SECTION 103 OCEAN DISPOSAL EVALUATION REPORT

I. **Description of Action.** This report is the chemical and biological evaluation of potential dredged material (DM) from portions of San Juan Harbor and the entrance channel to the harbor. Evaluation of San Juan sediment considered both maintenance dredging and new work (widening and deepening) of the San Juan Harbor entrance channel and harbor channels, anchorages and berthing areas as discussed in the attached Final Consolidated Report For Obtaining and Analyzing Sediment Samples, Water Samples, and Bioassay Samples from San Juan Harbor, Puerto Rico, October 1, 1993. Volumes I and II. (copy attached, hereafter referred to as the "Final Report", see map on page 2-2). The project area was discussed in detail in the Sample Plan and Protocol submitted to the U. S. Environmental Protection Agency (EPA) prior to the beginning of this evaluation.

II. Description of the Disposal Site. The disposal site is the San Juan Ocean Dredged Material Disposal Site. This site is located approximately 1.5 miles offshore from the Island of Puerto Rico near San Juan Harbor and is designated for the disposal of dredged material (see map, Final Report, Volume I, page 2-3). The site is one mile square with center coordinates of 18°30'40"N, 66°09'00"W and is in water approximately 140 fathoms (840 feet) deep.

III. **Description of Dredged Material.** A review of the type of sediment in the San Juan Harbor project limits was based on core borings for the various channels. The Entrance (Anegado), Army Terminal Channel, Puerto Nuevo Channel, and Graving Dock Channel had been shown to be almost uniformly clay, arrayed in a CL horizon over a CH horizon. The Bar Channel was mostly sand and limestone with thin layer of sand or silt in some places.

Analysis of samples taken for this testing confirmed the previous core boring data. With the exception of sample station E-SJH93-9, all samples taken were clay (see Appendix B, Final Report, Volume II.)

IV. **Environmental Testing Results.** This evaluation used 21 sample stations numbered E-SJ93-1 through 21 (hereafter referred to in this report as sample stations 1-21, see map, Final Report, page 2-2. An area reference sample consisting of five sub-stations located near the San Juan ODMDS had already been taken in conjunction with the Rio Puerto Nuevo project and the results reported previously. The use of this data for this project was request in the sample Plan and Protocol and approved by EPA. This data is republished in the Final Report were appropriate for comparison. The reference stations are numbered RS-PN91-1 through 5.

Samples from all 21 sample stations, including duplicate samples